

Attorney Docket No. 027557-064
Serial No.: 09/684,985

REMARKS

In the Office Action, claims 1 - 6, 8 - 12, and 14 were noted as pending in the application, and all claims were rejected. No claim amendments are being submitted by this Response. Thus, claims 1 - 6, 8 - 12, and 14 remain pending in the application. The rejections of the Office Action are traversed below.

Rejection of Claims 1 - 6, 8 - 12, and 14 under 35 USC §103

In item 4, on pages 3 - 4 of the Office Action, claims 1 - 6, 8 - 12, and 14 were rejected under 35 USC §103 as being unpatentable over U.S. Patent No. 5,963,870 to Chheda et al. in view of U.S. Patent No. 6,208,861 to Suzuki. This rejection is respectfully traversed.

The Claimed Invention

Exemplary embodiments of the Applicant's invention are directed toward a radio transceiver and method for receiving radio signals, wherein the radio signal transmit power is controlled based on a quality estimator. The particular estimation algorithm utilized for the quality estimator is a function of the relative measured velocity of the mobile transceiver. In this manner, the transmit power level is controlled to be high enough to avoid data loss but not so high as to cause interference in excess of a threshold.

The Chheda et al. Patent

Chheda et al. discloses a method for switching between IS-95 forward power control and fast forward power control in a mobile radio as means for controlling transmission power (Chheda et al. at abstract; Col. 1, lines 53 - 59; Col. 12, lines 14 - 34). At higher mobile radio speeds, Chheda et al. utilizes the IS-95 forward power control to more quickly adjust transmission power levels (Col. 12, lines 22 - 32). At lower mobile radio speeds, the slower fast forward link power control process is used to control transmission power levels (Col. 12, lines 32 - 34).

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The Suzuki Patent

Suzuki discloses a method for monitoring a channel condition for a mobile terminal, wherein a moving radio terminal is switched from a first radio channel to a second radio channel when the channel condition of the second radio channel is better than that of the first radio channel (Suzuki at abstract; Col. 2, lines 42 - 48). The velocity of the mobile terminal is determined based on global positioning information (abstract; Col. 2, lines 15 - 19). The radio channels are monitored for the channel condition during an intermittent period of time, with the duration of the time period being a function of the velocity of the mobile terminal (Col. 2, lines 39 - 42; Col. 4, lines 13 - 17). As the velocity of the mobile terminal is reduced, the intermittent period becomes longer; and, conversely, as the velocity of the mobile terminal increases, the intermittent monitoring period becomes shorter (Col. 2, lines 49 - 52; Col. 4, lines 31 - 56).

The Claimed Invention is Patentably Distinguishable Over the Cited Documents

The Applicant's claimed invention is directed toward a radio transceiver and method for receiving radio signals, wherein the radio signal transmit power is controlled based on a signal quality estimator. The particular estimation algorithm utilized for the quality estimator is a function of the measured velocity of the mobile transceiver relative to the base station. In particular, and citing to the relevant parts of independent claim 1, the radio transceiver includes a quality estimator using an estimation algorithm having a response speed, wherein the response speed of the estimation algorithm is controlled in response to the measure of velocity of the transceiver. For example, as noted in the specification at page 4, lines 9 - 17, a fast SIR estimation algorithm can be utilized by the transceiver when the mobile station is moving at a low velocity so as to follow fast fading of the transmitted radio signal. Correspondingly, a slow SIR estimation algorithm can be utilized when the mobile station is moving at a high velocity.

The Office Action admits that Chheda et al. fails to disclose an estimation algorithm having a response speed, the response speed being controlled in response to the measure of velocity of the transceiver. The Office Action introduces the Suzuki patent as allegedly teaching such a feature. The Applicant respectfully disagrees. The Suzuki patent fails to

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disclose any estimation algorithm whatsoever, much less an estimation algorithm having a response speed that is a function of the velocity of the radio transceiver. Instead, the sole use of the calculated velocity of the mobile terminal of Suzuki is for determining the duration of an intermittent time period for monitoring the quality of adjacent radio channels (Suzuki at abstract; Col. 2, lines 39 - 52; Col. 4, lines 13 - 17).

While teachings of several documents may be combined to render a claimed invention obvious, there must be a motivation or suggestion in the documents relied upon to make the specific combination. Since neither reference discloses the estimation algorithm recited in claim 1, there could not possibly be any suggestion in either reference why the references should be combined in the manner suggested in the Office Action to render independent claim 1 obvious. Moreover, even if the references were to be combined in the manner suggested by the Office Action, the result would merely be the power control switching method of Chheda, with the radiotelephone's speed being determined with the global positioning system of Suzuki.

Therefore, the Applicants respectfully submit that the Chheda et al./Suzuki combination fails to render obvious the features recited in independent claim 1, and claim 1 is believed to be patentably distinguishable over Chheda et al. and Suzuki, either taken alone or in combination. Accordingly, it is respectfully requested that the rejection of claim 1 be withdrawn.

Claims 2 - 6 and 8 - 10 depend from claim 1 and include all the features of claim 1 plus additional features which are not taught or suggested by the Chheda et al. document or the Suzuki document. For example, claim 8 specifies that the response speed of the estimation algorithm is controlled such that a first higher response speed is used in the event of a low measure of velocity of the transceiver, and a second lower response speed is used in the event of a high measure of velocity of the transceiver, which is neither taught nor suggested by either Chheda et al. or Suzuki. The Office Action cites to Chheda et al. at Fig. 1; abstract; Col. 3, line 46 - Col. 4, line 17; Col. 4, lines 33 - 47 and 52 - 67 and to Suzuki at its abstract as allegedly disclosing "a first higher response speed is used for a low measure speed of the transceiver and a second lower speed is used for a high measured velocity of the transceiver."

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The Applicant respectfully asserts that the Office Action's reliance on this portion of the Chheda et al. disclosure is misplaced. Nothing in the cited portions of Chheda et al. discloses that an estimation algorithm is controlled based on a measure of the velocity of the transceiver. In fact, Chheda et al. is completely silent regarding the use of multiple estimation algorithms. Instead, the cited portions of Chheda et al. disclose that the power control apparatus of Chheda et al. estimates an energy to noise density ratio for received radio signals and compares the estimated ratio against a target ratio and adjusts the base station's transmit power level up or down accordingly (Chhedat et al. at Col. 3, lines 46 - 47; Col. 4, lines 49 - 55; Fig. 1). Similarly, the Office Action's reliance on the abstract of Suzuki to teach the features of claim 8 is misplaced. The Suzuki abstract is silent regarding the response speed of an algorithm being controlled by the measure of velocity of the transceiver. Further, a complete reading of the Suzuki patent discloses no estimation algorithm at all, much less an estimation algorithm having a response speed controlled by the measure of velocity of the transceiver.

Therefore, for at least this reason and the reasons set forth above with respect to claim 1, it is submitted that claims 2 - 6 and 8 - 10 patentably distinguish over the Chheda et al. and Suzuki documents; and withdrawal of the rejection of the claims 2 - 6 and 8 - 10 is respectfully requested.

Claim 11 is a method claim for estimating quality of received radio signals in a transceiver that also recites the feature of a quality estimation algorithm having a response speed, and the response speed of the estimation algorithm being controlled in response to the measure of relative velocity of the transceiver. For the reasons discussed above regarding claim 1, it is respectfully submitted that the Chheda et al./Suzuki combination also fails to render obvious the features recited in claim 11; and, accordingly, Chheda et al. and Suzuki, whether taken individually or in combination. It is therefore respectfully requested that the rejection of claim 11 be withdrawn.

Claims 12 and 14 depend from claim 11 and include all the features of claim 11 plus additional features which are not taught or suggested by either the Chheda et al. patent or the Suzuki patent. For example, claim 14 specifies that the response speed of the estimation algorithm is controlled such that a first higher response speed is used in the event of a low

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measure of velocity of the transceiver, and a second lower response speed is used in the event of a high measure of velocity of the transceiver, which is neither taught nor suggested by either Chheda et al. or Suzuki. Therefore, for at least this reason and the reasons set forth above with respect to claims 8 and 11, it is submitted that claims 12 and 14 patentably distinguish over the Chheda et al. and Suzuki documents, whether taken individually or in combination. The Applicant respectfully requests withdrawal of the rejection of claims 12 and 14.

Rejection of Claims 1 - 6, 8 - 12, and 14 under 35 USC §102 ¹⁰³

In item 5, on pages 4 - 6 of the Office Action, claims 1 - 6, 8 - 12, and 14 were rejected under 35 USC §102 as being anticipated by published European Patent Application No. EP0847146 to Endo et al. in view of Suzuki. This rejection is respectfully traversed.

The Endo et al. Patent Application

Endo et al. discloses a power control apparatus for controlling the radio signal transmission power based on the radio communication qualities between a mobile terminal and a base station (Endo et al. at Abstract; Col. 1, lines 3 - 11). A power control apparatus at the transmitting device adjusts the transmission power up or down based on error rate values received from the receiving device (Col. 13, lines 26 - 41). The power control apparatus can also adjust the transmission power in one channel direction between the mobile terminal and the base station taking communication quality of the other channel direction into account and thereby reducing interference with other communication (Abstract; Col. 16, lines 17 - 36). The power control apparatus further has dual error rate threshold values, based on whether the mobile terminal is determined to be in a high-speed moving mode or a normal-speed moving mode (Col. 21, lines 50 - 55).

The Claimed Invention is Patentably Distinguishable Over the Cited Documents

The Applicant's claimed invention is directed toward a radio transceiver and method for receiving radio signals, wherein the radio signal transmit power is controlled based on a signal quality estimator. The particular estimation algorithm utilized for the quality estimator

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is a function of the measured velocity of the mobile transceiver relative to the base station. In particular, and citing to the relevant parts of independent claim 1, the radio transceiver includes a quality estimator using an estimation algorithm having a response speed, wherein the response speed of the estimation algorithm is controlled in response to the measure of velocity of the transceiver. For example, as noted in the specification at page 4, lines 9 – 17, a fast SIR estimation algorithm can be utilized by the transceiver when the mobile station is moving at a low velocity so as to follow fast fading of the transmitted radio signal. Correspondingly, a slow SIR estimation algorithm can be utilized when the mobile station is moving at a high velocity.

For a claim to be rejected under 35 USC § 102 as being anticipated by a reference, the reference must teach each and every element of the claim. By admission in the Office Action, Endo et al. fails to teach the estimation algorithm recited in independent claims 1 and 11 of the present application. Further, as discussed above, Suzuki also fails to teach such a feature. Since Endo et al. and Suzuki each fail to disclose each of the features recited in claims 1 and 11, it is respectfully submitted that neither reference can reasonably be said to anticipate Applicant's claimed invention. It is therefore respectfully requested that the rejection of claims 1 and 11 be withdrawn.

Claims 2 - 6 and 8 - 10 depend from claim 1 and include all the features of claim 1 plus additional features which are not taught or suggested by the Endo et al. application or the Suzuki document. Further, claims 12 and 14 depend from claim 11 and include all the features of claim 11 plus additional features which are not taught or suggested by either the Endo et al. application or the Suzuki patent. For example, claims 8 and 14 specify that the response speed of the estimation algorithm is controlled such that a first higher response speed is used in the event of a low measure of velocity of the transceiver, and a second lower response speed is used in the event of a high measure of velocity of the transceiver, which is neither taught nor suggested by either Endo et al. or Suzuki. The Office Action cites to Endo et al. at Col. 13, line 45 - Col. 14, line 53; Col. 21, line 19 - Col. 22, line 33 and to Suzuki at its abstract as allegedly disclosing "a first higher response speed is used for a low measure speed of the transceiver and a second lower speed is used for a high measured velocity of the transceiver."

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The Applicant respectfully asserts that the Office Action's reliance on this portion of the Endo et al. disclosure is misplaced. Nothing in the cited portions of Endo et al. discloses that an estimation algorithm is controlled based on a measure of the velocity of the transceiver. In fact, Endo et al. is completely silent regarding the use of multiple estimation algorithms. Instead, the power control apparatus of Endo et al. accommodates high-speed and normal-speed terminal movement with two different, predetermined threshold error values for triggering a power transmission changed based on the velocity of the mobile terminal (Col. 21, line 42 - Col. 22, line 20). Similarly, the Office Action's reliance on the abstract of Suzuki to teach the features of claims 8 and 14 is misplaced. The Suzuki abstract is silent regarding the response speed of an algorithm being controlled by the measure of velocity of the transceiver. Further, a complete reading of the Suzuki patent discloses no estimation algorithm at all, much less an estimation algorithm having a response speed controlled by the measure of velocity of the transceiver.

Therefore, for at least this reason and the reasons set forth above with respect to claims 1 and 11, it is submitted that claims 2 - 6, 8 - 10, 12, and 14 patentably distinguish over the Endo et al. and Suzuki documents; and withdrawal of the rejection of the claims 2 - 6, 8 - 10, 12, and 14 is respectfully requested.

As discussed above, for a claim to be rejected under 35 USC § 102 as being anticipated by a reference, the reference must teach each and every element of the claim. Accordingly, the rejection of claims 1 - 6, 8 - 12, and 14 under 35 USC § 102(a) as being anticipated by Endo et al. in view of Suzuki is improper because Endo or Suzuki must stand alone in teaching all of the claimed features (emphasis added). See MPEP § 706.02. While additional references are permitted under 35 USC § 102 for the very limited purpose of supporting the primary reference, two references cannot be combined under 35 USC § 102 to render the claimed invention anticipated by being obvious in view of the two references, as asserted in the Office Action. See MPEP § 2131.01. Accordingly, for this additional reason, the rejection of claims 1 - 6, 8 - 12, and 14 under 35 USC § 102 in view of Endo et al. and Suzuki is improper and should be withdrawn.

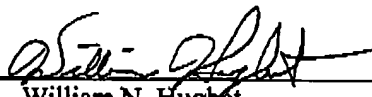
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Summary

It is submitted that none of the documents, either taken alone or in combination, teach the claimed invention. Thus, claims 1 - 6, 8 - 12, and 14 are deemed to be in a condition suitable for allowance. Reconsideration of the claims and an early Notice of Allowance are earnestly solicited. If any fees are required in connection with this Amendment, please charge the same to our Deposit Account No. 02-4800.

Respectfully submitted,

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